

LISTING OF CLAIMS

Claim 1 (Currently amended): A ~~metal valve stem~~ sealing system comprising:

a valve body;

a ~~metal valve stem~~ housed within the valve body;

a bonnet member ~~housed within the valve body~~;

a ~~U-shaped metal~~ stem gasket positioned between the ~~metal valve stem~~ and the bonnet member, wherein the gasket has a first lip member and a second lip member each having an interior surface and an exterior surface, wherein the first and second lip members have upper portions and lower portions, and wherein the lower portion of each lip member has an exterior sloped surface;

a ~~metal~~-wedge ring fitted between the interior surface of the first lip member and the interior surface of the second lip member; and

at least one ~~metal energizing~~ spring adjacent the wedge ring, wherein the ~~metal energizing~~ spring applies a sufficient force to the wedge ring to cause the wedge ring to apply a sufficient contact pressure to the first and second lip members ~~to expand the first and second lip members to form a seal between the gasket and the metal valve stem and to form a seal between the gasket and the bonnet member~~ such that the exterior sloped surfaces of the first and second lip members rotate outwardly to extend, respectively, a first airtight seal contact area between the first lip member and the valve stem and a second airtight seal contact area between the second lip member and the bonnet member.

Claim 2 (Currently amended): The ~~metal valve stem~~ sealing system of claim 1 further comprising an anti-rotation pin attached to the ~~metal stem~~ gasket.

Claim 3 (Original): The sealing system of claim 1 wherein the first lip member is coated on an exterior surface with an alloy selected from the group of alloys comprising tungsten carbides and chromium carbides.

Claim 4 (Original): The sealing system of claim 1 wherein the valve stem is coated on an exterior surface with an alloy selected from the group of alloys comprising tungsten carbides and chromium carbides.

Claim 5 (Canceled).

Claim 6 (Original): The sealing system of claim 1 wherein the contact pressure is proportional to an operating pressure applied to the interior of the gasket.

Claim 7 (Currently amended): The sealing system of claim 1 wherein the wedge ring is comprised of a metal selected from the group consisting of stainless steel and a nickel based alloy. ~~high nickel alloy, Duplex SS, Super Duplex SS, and Inconel 718.~~

Claim 8 (Currently amended): The sealing system of claim 1 wherein the ~~metal of the energizing~~ spring is comprised of a metal selected from the group consisting of stainless steel and a nickel based alloy. ~~Inconel X750, Inconel 718, and Elgiloy.~~

Claim 9 (Currently amended): The sealing system of claim 1 having a plurality of ~~from about one to about twenty energizing~~ springs.

Claim 10 (Original): The sealing system of claim 1 wherein the sealing system is used in deep sea gas and oil drilling, subsea flow lines and pipelines.

Claim 11 (Currently amended): The sealing system of claim 1 wherein the force applied by the ~~energizing~~ spring to the wedge ring is in the range of from about 100 pounds to about 2000 pounds.

Claim 12 (Currently amended): The sealing system of claim 1 wherein the gasket and lip members can withstand an operating pressure of up to 20,000 psi ~~(pounds per square inch)~~.

Claim 13 (Original): The sealing system of claim 1 wherein the valve stem is a rotating stem.

Claim 14 (Original): The sealing system of claim 1 wherein the valve stem is a rising stem.

Claim 15 (Currently amended): The sealing system of claim 1 further comprising a stem bearing adjacent a first top portion of the gasket; ~~an energizing~~ a spring and spring holder both adjacent a second top portion of the gasket; and a thrust bearing adjacent a lower end of the ~~energizing~~ spring.

Claim 16 (Currently amended): A ~~metal valve stem~~ sealing system comprising:

- a valve body;
- a ~~movable metal~~ valve stem extending through a stem opening within the valve body;
- a bonnet member ~~housed within the valve body~~;
- a ~~U-shaped metal~~ stem gasket positioned between ~~an exterior~~ a surface of the ~~metal~~ valve stem and ~~an exterior~~ a surface of the bonnet member, wherein the gasket has a first lip member and a second lip member that both extend ~~downwardly~~ from a gasket body, the first and second lip members each having an interior surface and an exterior surface, wherein the first and second lip members

have upper portions and lower portions, and wherein the lower portion of each lip member has an exterior sloped surface;

a ~~metal~~-wedge ring fitted into position between the interior surface of the first lip member and the interior surface of the second lip member; and,

at least one ~~metal-energizing~~ spring positioned adjacent a bottom portion of the wedge ring, wherein the ~~metal-energizing~~ spring applies a sufficient force to the wedge ring to cause the wedge ring to apply a sufficient contact pressure to the first and second lip members, ~~such that the first lip member is mechanically forced to form a first airtight seal contact area between the first lip member and the exterior surface of the metal valve stem, and such that the second lip member is mechanically forced to form a second airtight seal contact area between the second lip member and the exterior surface of the bonnet member~~ such that the exterior sloped surfaces of the first and second lip members rotate outwardly to extend, respectively, a first airtight seal contact area between the first lip member and the valve stem and a second airtight seal contact area between the second lip member and the bonnet member.

Claim 17 (Currently amended): The sealing system of claim 16 further comprising an anti-rotation pin attached to the ~~metal~~-stem gasket.

Claim 18 (Currently amended): A ~~metal-to-metal~~ seal for sealing between a ~~movable~~-valve stem and a bonnet member, the ~~metal~~-seal comprising:

a ~~U-shaped metal~~ stem gasket positioned between an ~~exterior~~ a surface of the ~~metal~~-valve stem and an ~~exterior~~ a surface of the bonnet member, wherein the gasket has a first flexible lip member and a second flexible lip member, the first

and second lip members each having an interior surface, an exterior surface, an upper portion, and a lower portion, and further wherein the lower portion of each lip member has an exterior sloped surface;

a ~~metal~~-wedge ring positioned between the interior surface of the first lip member and the interior surface of the second lip member; and

at least one ~~metal-energizing~~ spring positioned adjacent the wedge ring, wherein the ~~metal-energizing~~ spring applies a sufficient force to the wedge ring which causes the wedge ring to apply a sufficient contact pressure to the first and second lip members ~~that mechanically forces the lower portions~~ such that the exterior sloped surfaces of the first and second lip members ~~to rotate outwardly to form extend~~, respectively, a first airtight seal contact area between the first lip member and the ~~exterior~~-surface of the ~~metal~~-valve stem and a second airtight seal contact area between the second lip member and the ~~exterior~~-surface of the bonnet member.

Claim 19 (Currently amended): The ~~metal-to-metal~~ seal of claim 18 wherein the gasket and lip members can withstand an operating pressure of up to 20,000 psi (~~pounds per square inch~~).

Claim 20 (Currently amended): The ~~metal-to-metal~~ seal of claim 18 further comprising an anti-rotation pin attached to the ~~metal~~-stem.